

THE GLASS JEWELRY IN SA HUYNH CULTURE (VIETNAM)

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ABSTRACT

Glass objects in Sa Huynh culture have been studied by many scholars and researchers, among whom are Nguyen Kim Dung, Yuko Hirano and so on, but their studies are just overviews. The flood in 2009 helped to unearth a glass kiln complex in Phu Yen province, which is the first of its kind found in Vietnam. From this discovery, I find that this glass kiln is very similar to that of Papanaidupet in India in terms of glass processing techniques: drawing techniques, mold rolling techniques, molding techniques; glass products; in addition to string beads and rings, there have been Sa Huynh products like two-headed animal earrings. The purpose of this paper is to study glass jewelry and point out the cultural exchanges between Sa Huynh and India. It can be said that this cultural contacts existed from around the 5th century B.C to the beginning of the Christ, through the commercial route (Maritime Silk Road) or the sea Silk Road (Sea Silk Road).

KEYWORDS: Glass jewelry, India, & Sa Huynh

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INTRODUCTION

Prior to the year of 2009, when studying glass objects of Sa Huynh culture, archaeologists found glass products and some vestiges of glass production. The flood at the end of 2009 unearthed Tan An glass kiln complex in Xuan Son Nam commune, Dong Xuan district, Phu Yen province, Vietnam. This discovery is very essential as it helps to study Sa Huynh glassware and contributes to signify the cultural contact between Sa Huynh and Indian culture.

Glass Kiln in Sa Huynh

Ky Lo river, from La Hai town to Tien Chauestuary, is called Cai River. Cairiver, which runs through Xuan Son Nam commune, Dong Xuan district, Phu Yen province, is about 400-500 meters wide. In the dry season, the river water has only a small flow about 1-2 meters deep, but the rainy season it flows up the two sides of the bank. The kiln in Xuan Son Nam is distributed on a high ground close to the right bank of Cairiver called Tan An. Another cluster of kilns is located in Long Ha village in La Hai town, about 7 km west of Tan An kiln in Xuan Son Nam commune. Another cluster of kilns is located in the village of Tan Vinh 2, also in Xuan Son Nam commune. This cluster is located about 2km east of Tan An kiln. The flood at the end of 2009 swept away the bamboo bank outside the promontory, and washed away the surface soil of about 1 meter thick, so it made the furnace expose. The whole area of the furnace appeared on an area of 3.725m², with 73 traces of earthenware kilns. A series of kilns appear unevenly distributed, they are in separate places and some distributed in clusters of 2 to 3 kilns. Due to the floodwaters were devastating, most of the kilns were damaged in the upper part, probably losing about a third. The rest shows that the kiln has a rather homogeneous shape, the horizontal section has an oval shape, two ends

have 2 doors, including a large door and a small one. Only a few have a door at one end. The furnace wall is made of earthenware. The dimensions of the furnaces are uneven, the length varies from 1.5 m to 3 m; width from 0.5 to 1.1 m; The walls are from 2cm to 9cm thick (Figure 1)¹.



Figure 1: Tân an Glass Kiln in Xuânson Nam (PhúYên)

According to archaeologists who directly excavated and surveyed, the biggest kiln was the third, located in the north-south direction. The kiln is oval in shape, 2 ends have 2 doors, in which the small door is 20cm, 30cm wide in the south direction and the big door is 80cm long and 40cm wide in the north. The kiln is 2.9 m long; width 1.1cm and height 60cm (exclusive of the broken part). The kiln wall is 9cm thick, made of fine clay and machined on both sides, which are relatively flat, earthened and have a bright yellow color. The higher ti is, the more likely it curves inside. The inner part from the ground to the depth of 20cm is sandy clay, from a depth of 20cm to a depth of 55cm is sandy clay mixed with ash, under the ash layer is a soil layer with a burning phenomenon of 10cm thick. Under this soil layer is a fine gray clay layer. The bottom of the small door tilts at an angle of about 45° and the big door bottom tilts at an angle of about 30°²

It is worth noting that Tan An glass kiln in Xuan Son Nam commune (Phu Yen) is very similar to the traditional glass kiln in Papanaidupet village (India) produced by drawing technique (Figure 2 and Figure 3).



Source:http://www.1001images.com/catalogue_des_films/pages/afriqueinde/AI01b_glassmakerspapanaidupet_EN.html

Figure 2: Glass Kiln in Papanaidupet (India)

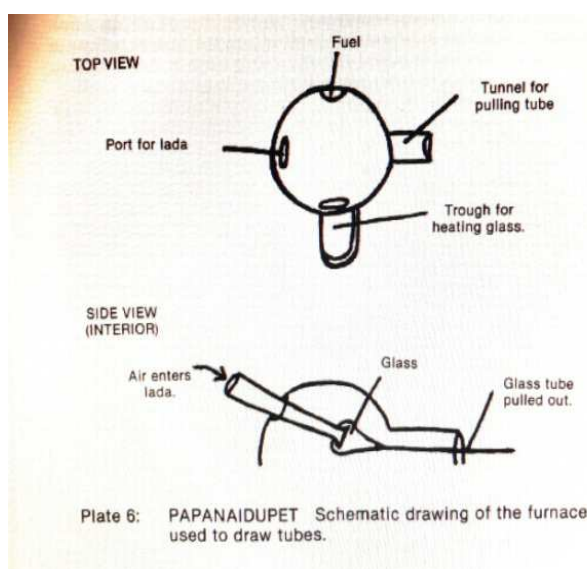
¹NguyễnTiếnĐông (2018), A special relic site: Furnace- grave (XuânSon Nam commune, ĐồngXuân district, PhúYên province),<http://baotanglichsu.vn/vi/Articles/3127/68513/ve-mot-loai-hinh-di-tich-djac-biet-lo-mo-xa-xuan-son-nam-huyen-djong-xuan-tinh-phu-yen.html>

²NguyễnTiếnĐông (2018), Ibid.



Source: http://www.1001images.com/catalogue_des_films/pages/afriqueinde/AI01b_glassmakerspapanaidupet_EN.html

Figure 3: Kiln in Papanaidupet(ẤnĐộ)



Source: https://beadresearch.org/wp-content/uploads/Repeating_Material/CBR/Glass_Beads_of_India.pdf

Figure 4: Seen From above of papanaidupet (India)

According to the schematic drawing (Figure 4) viewed from the top and the Papanaidupet (India) section of Peter Francis, if viewed from above, the kiln has four doors: Port for lada, Tunnel for pulling tube, a door for input material (Fuel) and a door with trough for heating glass (Trough for heating glass); If you follow the section, you will see only two doors: one is higher for air into the lada (Air enters lada), and one is lower for pulling out the glass tube (Glass tube pulled out)¹

Tan An glass kiln (Phu Yen) lost the upper part due to the floodwaters at the end of 2009, so the excavations of archaeologists recognized only two doors: the small door tilted at an angle of about 45° in the south direction and the big door tilted at an angle of about 30° in the north direction. Compared to the Papanaidupet furnace (India), the small door tilts at an angle of about 45° in the south direction, to place the lada for air to enter into the lada (Air enters lada) and the

¹Peter Francis, JR. (1982), *The glass beads of India*, https://beadresearch.org/wp-content/uploads/Repeating_Material/CBR/Glass_Beads_of_India.pdf

large door tilting at an angle of about 30° in the north direction, lower is to pull the glass tube out (Glass tube pulled out). Of the four kilns excavated and explored by archaeologists in Tan An, the first kiln is facing southwest – northeast directions, the second facing north – south direction, the third facing south - north direction, and the fourth facing southwest - northeast direction¹. Thus, all four kilns almost have wind direction doors (small high doors) that are either south or southwest. The South wind (Vietnamese call it Nom wind) is the summer wind, which is of the dry season in the Central of Vietnam from December to April (from May to November is the rainy season). It can be said that the ancient inhabitants here used the Southern wind force of the dry season to produce glass.

Glassware is abundant in Sa Huynh culture and also in other cultures of Southeast Asia for a few centuries before Christ. Sa Huynh acculturated with Indian culture through the maritime trade road (Maritime Silk Road), trading according to the monsoon, in which there are trade items such as jewelry, string beads, which are strikingly originated from India. Van Der Sleen called these string beads “The trading wind beads”². So likely, Tan An kiln is covered with soil in Xuan Son Nam commune, Dong Xuan district, Phu Yen province - similar to the traditional glass-covered glass furnace in Papanaidupet village (India) - discovered in 2009, is the glass production area of Sa Huynh culture residents.

Techniques for Making Glassware in Sa Huynh Culture

To make glassware, the following steps should be taken:

- Preparation phase for mixing and melting glass, preparing molds.
- Artifact shaping phase.
- drying and remodeling phase.

Glass material is pure white sand with high percentage of silic. The best way to mix ingredients is new sand material plus recycled materials. Glass is quick to melt with high degree of durability³.

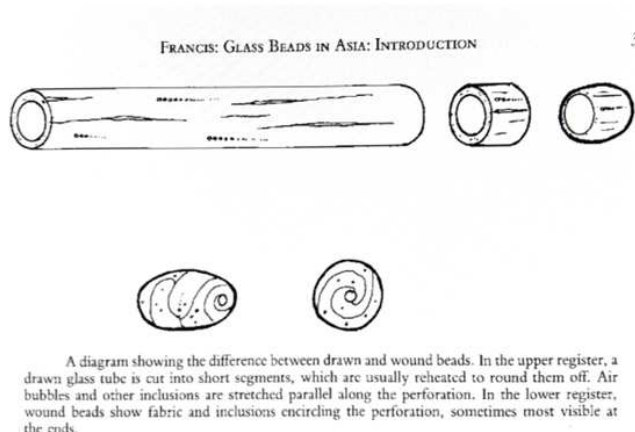
Red glass beads called "Indian Red" are found in East Africa and Southeast Asia by the wind of trade. This type of red glass bead is made by roll technique. Roll technique is considered to be the oldest technique, the technique of rolling glass with a tube. Opaque small orange and red glass beads have their origin from Arikamedu site in southern India and are called "Mutisalah" (fake string beads). This series of beads is fabricated by pulling technique, by cutting long, thin glass tubes that are stretched by the blowpipe (Figure 5). The difference between the two techniques (Roll technique and pull technique) can be distinguished by air bubbles and the direction of the lines in the glass⁴.

¹NguyễnTiếnĐông (2018), *ibid*.

²Van Der Sleen W. G. N (1967), *A Handbook on Beads*, Liberty Cap Books Prees, pp.96-101

³NguyễnTrườngKỳ (1996), *Ancient glassware in Vietnam*, Social Science Publisher, pp. 61-63

⁴Yuko Hirano (2004), *Glassware in Vietnam: From a study in cultural exchange at the major ports sites in Iron Age, A Century of Vietnam Achaeology*, Vol. I, Social Science Publisher, pp. 809



Source: <https://core.ac.uk/download/pdf/5105231.pdf>

Figure 5: Diagram Represents Differences between Drawn and Wound Beads



Source: Anthropology Museum

Figure 6: Glassware Produced By Draw Technique in Lai Nghi Site (Quang Nam Province) Belonging to Sa Huynh Culture

Another technique for making special and single glassware such as two-headed animal earrings in Sa Huynh culture is molding technique. In terms of quality, glassware made of molding techniques can be classified into two types: molding techniques and molding techniques with grain sand. The molding technique used to put the mixed materials into mold of the glass melting furnace to create beautiful products. The molding technique with sand grains is to put them and broken glass (or glass beads) in the mold and harden them.

Because the sand does not melt completely, there are cracks, so the products created are of low quality¹. Very likely, the two-headed glass animal earrings found in GiongCaVo (Ho Chi Minh City) relics, are of good quality, created by molding techniques and also some are of poor quality, created by molding techniques with sand grains and broken glass.

Unique Characteristics of Glassware in Sa Huynh Culture

In addition to glassware of Sa Huynh culture such as chain beads, bracelets, there have been unique products like two-headed animal earrings. The most common two-head animal earrings are found in GiongCaVo (Ho Chi Minh City) relic.

¹Yuko Hirano (2004), Ibid, pp. 813

8 glass double-headed earrings, including 3 quite similar pairs found in 3 graves have been found in GiongCa Vo. In the excavation in 1993, a pair of two-headed animal earrings in dark green, small in size was found in grave 27. During the excavation in 1994, a pair of dark green small two-headed animal earrings, crystal without foam, smooth and polished all over, resembling a template found in Dai Lanh site was found in a grave of 40c hole 3. It is currently kept at the Danang Museum. At grave 91b hole 4, a pair of blue two-head animal earrings was found, and it is the first time to find this blue glass in a two-headed animal earrings. The other two, one is blue with small size and the other in light green, are still full of bubbles in their bodies.

Technically, the molding and machining marks are very clear: each one has a certain face and a certain mouth type. The quality of glass is uneven. The blue earrings are easily broken into fibers, not into the scales and thin, often seen in high quality glass¹ (Figure 7 và Figure 8).



Source: <http://baotanglichsu.vn/vi/Articles/3101/69526/ve-mot-loai-hinh-trang-suc-co-djoc-djao-khuyen-tai-hinh-hai-djau-thu.html>

Figure 7: Dark Green Earrings in Giongca Vo



Source: <http://baotanglichsu.vn/vi/Articles/3101/69526/ve-mot-loai-hinh-trang-suc-co-djoc-djao-khuyen-tai-hinh-hai-djau-thu.html>

Figure 8: Light Green Earrings in Giongca Vo

¹Nguyễn Kim Dung, TrịnhCăn, ĐặngVănThắng, VũQuốcHiềnvàNguyễnThịHậu (1995), Jewelry in Jar Graves in Can Gio (Ho Chi Minh City, Journal of Archaeology, No. 2 (1995), pp.36

CONCLUSIONS

Glassware in Sa Huynh culture are plentiful and diverse including types of cylindrical strings, fruit shape, octagonal shape, globular shape, bracelets, three-hooked earrings, two-headed animal earrings. Especially in GiongCaVo, 19 glass beads strings gilded with gold and 8 glass two-headed animal earrings with low quality and high quality have been found. In Sa Huynh culture, there probably existed 3 techniques of glassware production: winding technique (creating red string beads), drawing techniques (creating beads of cylindrical shape and small string beads) and molding techniques (creating earrings with two animal heads, and three-hooked earrings).

The Sa Huynh - India relationship through glassware is quite clear. It can be said that this relationship, around the 5th century B.C. to the beginning of the Christ, was a trade exchange relationship through the commercial route or the Silk Road (Sea Silk Road). Handicrafts from India, including production techniques, were imported by Sa Huynh residents. At Sa Huynh, the cultural reception has taken place and through the labor process, there have been new innovations such as glass double-headed earrings, very unique products in over the world.

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